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# A Longitudinal Study of Decision Making in the Process of Acquiring a Dog

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**ABSTRACT** To prevent potential problems in the relationship between people and their dogs, it is important to engage in a thoughtful decision-making process with regard to acquiring a dog. To map the most important elements in the decision-making process, a social cognitive model was applied using seven psychological constructs: perceived advantages of having a dog; perceived disadvantages; the social norm; self-efficacy; optimism; expected commitment; and the intention to acquire a dog. People who were planning to acquire a dog within one year were asked to fill in an online questionnaire and another one 14 months later. The social cognitive constructs were operationalized in the baseline questionnaire, and in the follow-up participants were asked to report whether they had actually acquired a dog during the 14-month interval. The sample ( $n = 588$ ) largely consisted of females (88%) and those who had a high level of education (64%). The mean age of the participants was 40.9 years. The data showed significant relations among the decision-making variables, and significant differences between demographic variables related to these. In univariate longitudinal analyses, several social cognitive variables significantly predicted acquiring a dog in the 14-month period. When intention to acquire a dog was entered into the multivariate model, it remained the only predictor ( $OR = 2.16, p < 0.001$ ); the model explained 33% of the variance in acquiring a dog. It was possible to assess the main constructs that play a role in decision making regarding acquiring a dog: Most baseline measures were related to actual later behavior, also when taking into account all changes in other internal and external factors that may have taken place. Insight into the decision-making process makes it possible to intervene in it for the good of people, dogs, and their relationships.

**Keywords:** behavior prediction, decision making, dog, human–animal interaction, human–dog relationship, social cognitive theory



The decision-making process regarding acquiring a dog (or any other companion animal) has received little attention in the past. This is unfortunate because suboptimal decisions can, among

other things, lead to poor relationships between the person and the dog. Known problems are behavioral issues of the dog (e.g., difficulties in training; soiling; and aggressive behavior: Greenebaum, 2006; O'Farrell, 1997), which are a nuisance and can cause suffering in humans and in the dog (e.g., neglect: Arluke, 2006). These unwanted circumstances can also lead to the relinquishment of the dog to a shelter (Coe et al., 2014; Lambert, Coe, Niel, Dewey, & Sargeant, 2015) or via another way (e.g., through a trading website). Making good-quality decisions about acquiring a dog may help prevent such problems from occurring.

In addition, dog ownership can lead to better human health and psychological well-being (Duvall Antonacopoulos, 2017; Friedmann, Thomas, & Eddy, 2000; Serpell, 1991; Serpell, 2003; Wells, 2009). These health benefits are more likely to occur when there is a close relationship between owner and dog. We assume that the chance of a good relationship increases when a balanced decision is made about the acquisition of a dog, taking into account what kind of dog best fits the personality characteristics and lifestyle of the owner. Owners matching their dogs on certain traits, such as an active lifestyle, are more satisfied with the relationship (Curb, Abramson, Grice, & Kennison, 2013). To be able to support a balanced decision to acquire a dog, insight is needed into the underlying decision-making process.

In the decision-making process, the perceived consequences and the feasibility of the possible options are considered. Applied to acquiring a dog, the decision process is meant to answer two main questions: what are the positive and negative consequences of an option (here, acquiring a dog), and to what extent will I be able to actually obtain the positive consequences and avoid the negative ones? The answers to these questions determine the decision and, thereby, the consequential behavior. The psychological processes that are involved in decisions and subsequent behaviors are comprehensively described in social cognitive theories, such as the Theory of Planned Behavior (Ajzen, 1991) and the Social Cognitive Theory (Bandura, 1986). In the present study, the theoretical framework is based on these theories and applied to acquiring a dog. The framework distinguishes seven psychological factors that may be involved in the decision: the perceived advantages and disadvantages of acquiring a dog, the social norm with regard to acquiring a dog, self-efficacy with regard to taking care of a dog, optimism with regard to the disadvantages, expected commitment to the dog, and the intention to acquire a dog. Each of these constructs will be explained in more detail.

The core of a decision is the weighing of the advantages and the disadvantages (Dwyer et al., 2006; Janis & Mann, 1977; Trope, Liberman, & Wakslak, 2007). With regard to owning a dog, the advantages, for example, refer to the social bond with the dog or the pleasure it provides. The disadvantages, for example, refer to time investment and financial costs. By attaching importance to the advantages and disadvantages of owning a dog and weighing both factors, a decision can be made: acquiring a dog or not. Thus, particularly the ratio between the advantages and the disadvantages can be regarded as an indicator of the decision process.

People typically live in social groups and they depend on others (Baumeister & Leary, 1995). Therefore it is important for them to take into account what others want. Also, they become sensitive to others' opinions, at least to those of people who are important to them. Because of the social need to belong, people want to gain approval and avoid disapproval. They have perceptions of the opinions of others; of what others want them to do. These perceptions are called subjective or social norms (Ajzen, 1991). Just like the above advantages and disadvantages, social norms are taken into account when making a decision.

Having a dog may be perceived as having strong advantages, for example, because it is expected to be a social companion. However, whether the advantages will also occur in reality

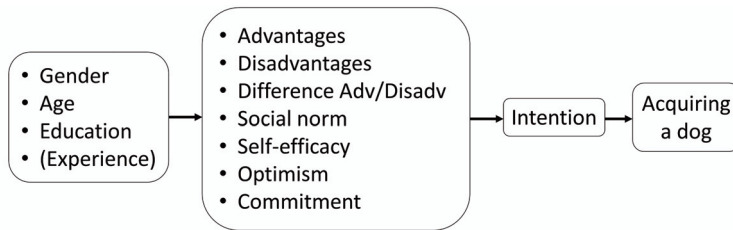
depends on whether the person is able to handle the dog adequately and take care of it. Only when people feel they are able to finish a task successfully will they become motivated to engage in it (Bandura, 1997; Berget, Ekeberg, & Braastad, 2008). So, only when people feel they are able to handle a dog and take care of it will they make the decision to acquire one. People make subjective assessments of their ability that may be more or less accurate (e.g., based on their past experience); independent of their validity, they are taken into account in their decision (Bandura, 1986).

In making the decision to acquire a dog, some optimism is needed. Optimism refers to the expectation of positive rather than negative future events and consequences (Scheier & Carver, 1985). In the present framework of acquiring a dog, optimism may particularly be involved in perceptions of the disadvantages. Perceived disadvantages have the power to block the decision to acquire a dog, but an optimistic view of the disadvantages may lower their inhibitory strength. When the disadvantages are relatively mild (because of optimism) compared with the advantages, the likelihood of deciding to acquire a dog is increased. Optimism may manifest as rationalizations or justifications regarding the costs and investments that are related to owning a dog (Bandura, 1986; Bandura, Barbaranelli, Caprara, & Pastorelli, 1996). Optimistic rationalizations such as “a dog adapts easily” might be true for some dogs, but are not necessarily true for all. Especially before one acquires a dog, it is difficult to say if this will be the case for the future dog. The endorsement of such optimistic beliefs may therefore support the decision to acquire a dog.

In the framework of acquiring a dog, another psychological factor might be relevant: commitment to the dog. In the Investment Model, commitment is related to the satisfaction with a relationship, possible alternatives, and the investments that have been made (Baker, Petit, & Brown, 2016). In the present study on decision making, people could not yet evaluate their relationship with the dog, but they might have expectations about the commitment with their future dog. In social cognitive theories this factor might be conceptualized as an expectation of an advantage; an expected gain in the relationship with the dog. Expected commitment is an estimation of future satisfaction with the dog (the extent to which a social need is fulfilled), and the desire to maintain the relationship after its acquisition (based on Buunk & Bakker, 1997 who apply this concept to human relations). Because people's need for social bonding, expected commitment is thought to be a relevant factor in the decision-making process.

In social cognitive theories, the above factors are conceptualized to culminate in an intention (Ajzen, 1991; Bandura, 1986). The intention is the psychological outcome of the decision-making process and will be translated into actual behavior. In many studies, the intention has been shown to be the best psychological predictor of actual behavior (Sheeran, 2002).

In the present study, we aimed to map the psychological factors involved in the decision-making process and relate them to actual behavior: the acquirement of a dog. A summary of the theoretical model is presented in Figure 1. Cross-sectional data (baseline) as well as longitudinal data (14 month follow-up) will be presented. Because this is the first study that applies a comprehensive social cognitive theory to the behavior of acquiring a dog in a quantitative study, the cross-sectional data are exploratory in nature. Firstly, the relations among the seven decision-related baseline variables in people who are planning to purchase a dog were explored. Secondly, we explored whether and how the variables are related to gender, age, level of education, and experience with dogs. The longitudinal data were used to test to what extent these variables can predict whether participants actually acquired a dog in a 14-month follow-up period.



**Figure 1.** The psychological factors in the decision-making process concerning acquiring a dog. All variables except Experience were used in the statistical models to predict acquiring a dog.

## Methods

### *Recruitment and Procedure*

A call was published on several websites, inviting people who were “planning to acquire a dog within one year” to fill out an online questionnaire. It was stated that filling in the questionnaire would take about 30 minutes. Participants were informed that they would also be asked to fill in a questionnaire six and 18 months after acquiring a dog. Ten vouchers of EUR 50 were raffled among the participants. The call was placed on websites and Facebook sites of Dutch organizations that provide information about dogs and dog ownership. The researchers were assisted in contacting these organizations by the Dutch Royal Association for the Protection of Dogs [de Hondenbescherming], an organization dedicated to the welfare of dogs in the Netherlands. Also, one Belgian organization placed the appeal on their website and 92 pet shops in the Netherlands were approached and asked whether they would place flyers advertising the study on their counters; 82 agreed to do so.

The questionnaire was made available online using the Qualtrics platform ([www.qualtrics.com](http://www.qualtrics.com)). By clicking on a link, participants were taken to a website with the online questionnaire. The first screen explained the aim of the research and stated that the questionnaire was the first one out of three (in this cohort study). It was also stated that the results would be processed anonymously. Participants were notified that, by continuing to the next page, they automatically gave informed consent. The questionnaire was administered in Dutch. The Institutional Review board of the faculty of Behavioural and Social Sciences of the University of Groningen reviewed and approved the research (ppo-014-265).

### *Design*

The present data comprise baseline and follow-up measurements. At baseline, only people who were planning to acquire a dog within one year were included. The follow-up of these participants was planned for six months after they had acquired a dog (which is not relevant to the present research question). To be able to time this six-month measurement, participants were contacted several times between six and 14 months after the baseline measurement, to assess if they had acquired a dog. The behavioral data in the present longitudinal analyses stem from these short measurements.

### *Measurements*

The participants completed a baseline questionnaire which included questions about gender, age, educational level, household composition, whether or not they had owned a dog before or currently owned one, whether they had worked with dogs before, and whether they had ever relinquished a pet. Questions were also asked about the dog they were planning to acquire.

The advantages of owning a dog were assessed with 25 items about the expected positive effects of owning a dog. This scale was based on the advantages of owning a dog as reported in the literature (Endenburg, 't Hart, & Bouw, 1994; McConnell, Brown, Shoda, Stayton, & Martin, 2011; Staats, Wallace, & Anderson, 2008), on observations of how dog owners talked about their dog(s), and on the personal experiences of the researchers. Examples of items are: "My dog will make sure that I have company" and "My dog will make sure that I get more physical exercise." Responses to the items were on a 5-point scale (totally disagree (1), disagree (2), neither disagree nor agree (3), agree (4), totally agree (5)). For meaningful analysis, scores 1, 2, and 3 were recoded as "do not agree" (0), score 4 "agree" was recoded as (1), and score 5 "totally agree" was recoded as (2). Next, these scores were summed ( $\alpha = 0.90$ ) and divided by the number of items (25). The higher the score the more the participants perceived having a dog as advantageous.

The disadvantages of owning a dog were assessed with 10 items about the expected negative effects of owning a dog. Again, this scale was based on reported reasons for not owning a dog (Endenburg et al., 1994), on observations of how dog owners talked about their dog(s), and on the researchers' own experiences with owning a dog. Examples of items are: "Because of the dog, I will have to plan my life more" and "Because of the dog, I will have more expenses." These items were scored on the same 5-point scale as mentioned above. Also, in the same way as described above, the items were recoded, summed ( $\alpha = 0.70$ ), and divided by the number of items (10). The higher the score the more the participants perceived it being disadvantageous to have a dog.

Optimism was assessed with 14 items: for example, "A dog does not mind being alone" and "A dog adapts easily." These were statements that could be true for some dogs but might not be the case for every dog, and are therefore difficult to predict before one acquires a dog. The items of this scale were based on one used by Dijkstra (2009) to measure optimistic beliefs in smokers with regard to the negative effects of smoking tobacco; they were rated on the same 5-point disagree–agree scale as described above. The mean item score was used as the scale score ( $\alpha = 0.71$ ). The higher the score the more optimistic the participants.

Social norm, which assesses people's estimation of what potentially relevant others might think they should do (Ajzen, 2002), was measured using three items (social groups: family, friends, neighbors) which were scored on a 5-point scale: The question was "My family/friends/neighbors think" and the possible answers ranged from "I certainly should not acquire a dog" (1) to "I certainly should acquire a dog" (5)." The average item score was used as the scale score ( $\alpha = 0.81$ ). The higher the score the more positive others were perceived to be about the participant acquiring a dog.

Self-efficacy (Bandura, 1997) was assessed with two items about how certain people were they were able: 1) to raise/train a dog; and 2) take care of a dog. Responses were given on 10-point scales: from "not certain at all" (1) to "very certain" (10). The average item score was used as the scale score ( $r = 0.75$ ). The higher the score the more confident people were about their abilities to handle a dog satisfactorily.

To measure expected commitment, a scale that was validated for measuring commitment between humans (Buunk & Bakker, 1997) was adapted. This scale consisted of seven items: for example, "To what extent do you think you will be attached to your dog?" and "Do you intend to always keep the dog?" These questions were answered on a 5-point scale, with different options for each question. Item-specific anchors for the examples ranged from "totally not attached/certainly not" (1) to "very attached/certainly" (5). The mean item score was used



as the expected commitment scale score ( $\alpha = 0.65$ ). The higher the score the more participants expected to be committed to a new dog.

Intention to acquire a dog was measured with two items: "I am planning to acquire a dog in the upcoming twelve months" and "It is likely that I will acquire a dog in the upcoming twelve months" (Grob, Dijkstra, & De Groot, 2011). These items were answered on a 7-point scale: from "certainly not" (1) to "most certainly" (7). The mean item score was used as the intention scale score ( $\alpha = 0.93$ ). The higher the score the more likely participants were to acquire a dog.

Several other scales were assessed but will not be presented here because they were not relevant to the hypotheses in the current study and were not thought to influence the scores on the other scales.

### Participants

There were 627 participants who filled in the baseline questionnaire. The data of 39 participants were removed because it turned out that they had already acquired a dog; therefore they did not meet the criteria for this study. The final sample consisted of 588 participants (Table 1): most were female (87.6%), the average age was 40.9, over 60% had a high level of education, and most (72%) did not work with dogs professionally.

## Results

### *The Difference Score between Advantages and Disadvantages*

To operationalize the balancing of perceived advantages and disadvantages of dog ownership, a difference score between the two was calculated: the advantages score minus the disadvantages score. The higher the score on this scale the relatively higher the advantages were compared with the disadvantages. The scores ranged from 1.80 (more advantages than disadvantages) to  $-0.92$  (more disadvantages than advantages).

### *Cross-sectional Analyses*

*Differences by Gender, Education, Age, and Experience with Dogs:* Table 1 shows the means and standard deviations of the eight social cognitive measures categorized by the four demographic variables. The  $p$ -values and effect sizes ( $0.02 = \text{small}$ ;  $0.06 = \text{medium}$ ;  $0.13 = \text{large}$ ; based on Cohen, 1988) indicate the significance of the differences. Gender showed few differences: only on three variables did males and females differ significantly, but with very small effect sizes. Age showed significant differences and small effect sizes on three variables: the higher the age group the fewer advantages were perceived; the smaller the difference score; and the higher the intention score. Level of education showed significant differences on six of the eight variables: the higher the education score the lower the score on all variables (except disadvantages and optimism), with small to (almost) medium effect sizes. Experience with dogs showed significant differences on six of the eight variables, with (about) medium effect sizes regarding the difference score, social norm, and commitment (all higher) and a large effect regarding self-efficacy, with the participants with no former experience scoring lower. Thus, especially level of education and experience with dogs were associated with the scores on the social cognitive variables.

*Correlations between Decision-related Variables:* The correlations among the eight social cognitive variables ranged from almost zero to 0.41 (Table 2). Most correlations were significant, even the smaller ones ( $< 0.10$ ); this is probably due to the large sample size ( $n = 588$ ). However, several meaningful correlations were observed. For example, optimism was significantly correlated, in the expected direction, with advantages ( $r = 0.25$ ), disadvantages ( $r = -0.26$ ), and the



**Table 1.** Means (and standard deviations) of the eight decision-making scale scores by gender, level of education, age group, and prior experience with dogs.

	Advantages	Disadvantages	Diff. Score	Social Norm	Self-efficacy	Optimism	Commitment	Intention
Gender ( <i>p</i> (es))	< 0.05 (0.008)	ns	ns	ns	ns	< 0.01 (0.012)	ns	< 0.05 (0.009)
Female ( <i>n</i> = 515)	0.74 (0.35)	0.67 (0.21)	0.073 (0.40)	3.90 (0.83)	8.79 (1.12)	2.91 (0.43)	4.64 (0.33)	5.46 (1.72)
Male ( <i>n</i> = 73)	0.65 (0.37)	0.62 (0.22)	0.022 (0.46)	3.88 (0.88)	8.86 (0.99)	3.05 (0.37)	4.58 (0.38)	5.95 (1.35)
Education ( <i>p</i> (es))	< 0.001 (0.05)	ns	< 0.001 (0.05)	< 0.01 (0.015)	< 0.01 (0.016)	ns	< 0.05 (0.01)	= 0.001 (0.018)
Medium ( <i>n</i> = 221)	0.83 (0.38)	0.64 (0.22)	0.18 (0.44)	4.03 (0.82)	8.98 (1.00)	2.96 (0.43)	4.68 (0.33)	5.82 (1.52)
High ( <i>n</i> = 367)	0.67 (0.32)	0.67 (0.21)	-0.005 (0.37)	3.82 (0.83)	8.69 (1.14)	2.91 (0.42)	4.61 (0.34)	5.35 (1.75)
Age ( <i>p</i> (es))	< 0.01 (0.024)	ns	< 0.01 (0.024)	ns	ns	ns	ns	< 0.01 (0.022)
18–31 ( <i>n</i> = 193)	0.81 (0.36)	0.65 (0.19)	0.15 (0.41)	3.99 (0.83)	8.93 (1.02)	2.96 (0.45)	4.68 (0.30)	5.22 (1.99)
32–47 ( <i>n</i> = 195)	0.71 (0.33)	0.66 (0.22)	0.49 (0.42)	3.81 (0.78)	8.69 (1.11)	2.92 (0.40)	4.62 (0.33)	5.53 (1.59)
48–86 ( <i>n</i> = 195)	0.67 (0.36)	0.67 (0.22)	0.00 (0.39)	3.91 (0.88)	8.79 (1.16)	2.89 (0.42)	4.60 (0.37)	5.84 (1.35)
Dog Ownership Experience ( <i>p</i> (es))	< 0.001 (0.037)	< 0.01 (0.022)	< 0.001 (0.059)	< 0.001 (0.046)	< 0.001 (0.16)	ns	< 0.001 (0.065)	ns
Never owned ( <i>n</i> = 108)	0.65 (0.29)	0.71 (0.18)	-0.06 (0.35)	3.53 (0.81)	8.00 (1.39)	2.85 (0.36)	4.50 (0.33)	5.22 (1.77)
Have owned ( <i>n</i> = 254)	0.69 (0.35)	0.67 (0.20)	0.011 (0.40)	3.93 (0.83)	9.24 (0.99)	2.92 (0.42)	4.60 (0.35)	5.58 (1.66)
Currently own ( <i>n</i> = 226)	0.81 (0.37)	0.62 (0.23)	0.18 (0.42)	4.03 (0.80)	9.24 (0.80)	2.97 (0.46)	4.73 (0.30)	5.61 (1.66)

(*p* (es)) = for each comparison an indication of the *p*-value and the effect size (eta-squared). ns = non-significant.

**Table 2.** Correlations among the eight decision-making scales.

	1	2	3	4	5	6	7	8
1. Advantages	1	0.017	0.86***	0.18***	0.23***	0.25***	0.36***	0.09*
2. Disadvantages		1	-0.50***	-0.09*	-0.08*	-0.26***	-0.06	0.05
3. Diff. Score			1	0.20***	0.24***	0.35***	0.34***	0.12**
4. Social Norm				1	0.40***	0.05	0.33***	0.24***
5. Self-efficacy					1	0.20***	0.41***	0.17***
6. Optimism						1	0.12**	0.10*
7. Commitment							1	0.14**
8. Intention								1

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

**Table 3.** Means (and standard deviations) of the eight decision-making variables in terms of having acquired a dog or not during the 14-month period. Results from univariate logistic regression analyses on the relations of each, controlling for gender, age, and level of education, are also provided.

	Acquired a Dog or Not		OR	95% CI	<i>p</i> -value
	No ( <i>n</i> = 155)	Yes ( <i>n</i> = 277)			
	<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>SD</i> )			
Advantages	0.68 (0.33)	0.75 (0.34)	1.66	0.88,3.15	0.12
Disadvantages	0.69 (0.21)	0.65 (0.21)	0.35	0.13,0.97	0.043
Diff. Score	-0.01 (0.41)	0.1 (0.40)	1.89	1.11,3.24	0.02
Social Norm	3.67 (0.87)	3.97 (0.79)	1.52	1.19,1.95	0.001
Self-efficacy	8.6 (1.25)	8.91 (0.99)	1.25	1.04,1.50	0.02
Optimism	2.89 (0.43)	2.92 (0.39)	1.20	0.73,1.99	0.48
Commitment	4.53 (0.39)	4.67 (0.31)	2.83	1.58,5.06	< 0.001
Intention	4.68 (1.74)	6.27 (1.05)	2.21	1.84,2.65	< 0.001

difference score ( $r = 0.35$ ). Furthermore, social norm was correlated, in the expected direction, with self-efficacy ( $r = 0.40$ ), commitment ( $r = 0.33$ ), and intention ( $r = 0.24$ ). Intention had only small correlations with the other variables (6 out of the 7  $r < 0.18$ ). Commitment, on the other hand, had higher correlations with the other variables (4 out of 7  $r > 0.33$ ). Overall, the correlations are small to moderate, suggesting that the overlap between concepts is limited.

### Follow-up Analyses

To investigate which baseline measures of the psychological scales could predict acquiring a dog (yes/no) over the 14-month period, we first conducted several univariate logistic regression analyses. All were controlled for gender, age, and level of education. Complete data about the acquisition of a dog were available for 432 participants, of whom 64.1% ( $n = 277$ ) had acquired a dog. As expected, the pretest difference score (between the advantages and the disadvantages) predicted whether participants actually acquired a dog within the 14-month period (OR = 1.89, 95% CI [1.11–3.24],  $p < 0.05$ ; see Table 3). The more advantages participants saw, compared with the disadvantages, the more likely they were to have acquired a dog. The disadvantages also predicted the behavior significantly (OR = 0.35, 95%

CI [0.13–0.97],  $p < 0.05$ ). The more disadvantages participants saw the smaller the chance that they had acquired a dog. Furthermore, the more positive participants thought their family, friends, and neighbors were about them acquiring a dog the more likely they were to have acquired a dog (OR = 1.52, 95% CI [1.19–1.95],  $p < 0.01$ ). Self-efficacy also predicted behavior. The more participants felt they could take care of a dog the more likely they were to have acquired one (OR = 1.25, 95% CI [1.04–1.50],  $p < 0.05$ ). Lastly, the higher the commitment (OR = 2.83, 95% CI [1.58–5.06],  $p < 0.01$ ), and the higher the intention (OR = 2.21, 95% CI [1.84–2.65],  $p < 0.01$ ) the higher the chance that a dog had been acquired. Only advantages and optimism were not significantly related to acquiring a dog.

Next, two multivariate logistic regression analyses were conducted with the above variables to predict acquiring a dog, again controlling for gender, age, and level of education. Because of multi-collinearity, the difference score was removed from the model. In the first model, without intention, with advantages, disadvantages, social norm, self-efficacy, optimism, and commitment as predictors, social norm (OR = 1.36, 95% CI [1.03–1.77],  $p < 0.05$ ) and commitment (OR = 2.06, 95% CI [1.03–4.11],  $p < 0.05$ ) were significant predictors in the expected directions. The Nagelkerke  $R^2$  of this model was 0.08, which means that the variables in the model explain 8% of the variance in acquiring behavior. In the second multivariate model, with intention, intention remained the only significant predictor (OR = 2.13, 95% CI [1.77–2.56],  $p < 0.001$ ). The Nagelkerke  $R^2$  indicated that the model explained 33% of the variance in acquiring behavior.

## Discussion

The aim of the study was to learn more about the factors involved in the decision-making process regarding the acquirement of a dog. A model was composed, based on state-of-the-art social cognitive theories (Ajzen, 1991; Bandura, 1997), and applied to decision making regarding acquiring a dog. Importantly, most of these constructs were related to actually acquiring a dog, thereby validating them as being part of the decision-making process.

Exploratory analyses showed that level of education was related to lower scores on the motivating factors. Those with a high level of education perceived fewer advantages of having a dog, absolute and compared with the disadvantages; they experienced less social pressure or approval to acquire a dog; they felt less capable of taking care of a dog; expected less commitment; and had a lower intention to acquire a dog. Consistent with this, a post-hoc analysis showed that participants with a medium level of education were more likely to have acquired a dog, compared with those with a high education level (71% and 60%, respectively). However, it is unclear whether and to what extent these differences between levels of education are due to a selection bias in this study. The possible differences in decision making between levels of education needs further study.

The exploratory analyses also showed that experience with dogs was related to the decision-making variables. Those who had never owned a dog scored lower on all eight variables, significantly lower on six of them, indicating a lower motivation but especially (given the large effect size) a lower perceived capability to take care of a dog. Again, a post-hoc analysis showed that participants who presently owned a dog more often had acquired a dog, compared with the other two levels of experience (never owned, have owned) (76%, 57%, and 57%, respectively). As in the case of education level, this might be related to a selection bias, although it is not unexpected that experience is related to decision making. It may be that experience reinforces a person's motivation and belief in their skills to take care of a dog.

The correlational analyses showed that all relationships among the variables were in the expected directions. For example, higher optimism scores were correlated with seeing more advantages and fewer disadvantages and especially with larger differences between these two scores. The term optimism sounds positive and it can have various positive effects (Scheier & Carver, 1985), but it can also be unrealistic. It may be applied unconsciously to force a decision in a specific direction (e.g., to purchase a dog) by biasing the processing of inhibiting information (i.e., information on the disadvantages; Liberman & Chaiken, 1992). The present operationalization was developed especially regarding the disadvantages of having a dog; high scores might indicate an underestimation of the disadvantages of having a dog. Over time, this might lead to problems with taking care of the dog. The present study was not designed to test that hypothesis.

The analyses also showed that advantages and disadvantages were not correlated. This is in line with those factors being orthogonal: they refer to qualitatively different aspects of reality. For example, the extent to which a dog is expected to be good company has little to do with the extent to which walking a dog is perceived as a burden: both can exist simultaneously. Expected commitment was positively correlated with advantages (and to the difference score), social norm, and self-efficacy. The relation with advantages indicates the motivational nature of expected commitment: this is what people desire. The correlation with social norm may indicate that the approval of others is relevant to expecting a good commitment. It shows the social nature of having a dog: the social embeddedness of having one. The correlation with self-efficacy may indicate that people expect more commitment when they feel some control over the situation of having a dog. Thus, the present study also shows that expected commitment seems to be a multifaceted construct referring to rather different aspects of a relationship (Baker, Petit, & Brown, 2016). The questionable internal consistency of the scale that was used ( $\alpha = 0.65$ ), though, may undermine the results. Future studies should further develop this construct for the human–dog relationship.

Lastly, the correlations with intention were rather small. This may be due to the narrow variance in intention, related to the fact that only participants who were planning to purchase a dog within one year were invited to join the study.

The univariate follow-up analyses showed that all variables except advantages and optimism were significantly related to having acquired a dog within the 14-month follow-up period. This is an important validation of our social cognitive model and its specific operationalizations. It shows that the baseline measurements not only tapped temporary, volatile psychological states but stable factors that can be presumed to be part of the decision-making process, and are indeed related to the outcome of this process: acquiring a dog or not.

The multivariate relations showed that the variables overlap. In the analysis without intention, only social norm and commitment were still related to behavior, and in the analysis with intention, intention was the only predictor left. Most likely, at least some of the relations with behavior are mediated. As shown in Figure 1, intention has a mediating function that is theoretically well founded, and that has been shown in many studies (Webb & Sheeran, 2006). The finding that intention explained 33% of the variance in behavior is in line with the literature on predicting behavior. This figure was 19.3% in a meta-analysis of 237 prospective tests on predicting behavior (McEachan, Conner, Taylor, & Lawton, 2011). Another meta-analysis showed that 31% of the self-reported behavior and approximately 21% of the objectively observed behavior were explained by the variables included in the model (Armitage & Conner, 2001). Because people either acquired a dog or not, the results in the current study largely correspond to objective behavior.

## Limitations

The current study has some limitations that should be considered. Firstly, the participants had already made the decision to acquire a dog: that was one of the inclusion criteria. This might have narrowed the variance on the different scales and could explain the low to moderate correlations that were found between the scales and the relatively small standard deviations. Secondly, there was a very high percentage of women (88%) in the sample, which limits the extent to which the present findings can be generalized. Thirdly, the proportion of participants with a high level of education was large (64%), with the rest being categorized as medium. Overall, the present sample is probably not representative of the actual dog-owner population, although this is not necessarily a limitation when it comes to studying relations between variables (in contrast to percentages).

## Conclusions

To conclude, hardly any empirical research has been conducted on the decision-making process of acquiring a dog. Therefore, we firstly gathered cross-sectional data from a large number of people who stated that they were planning to purchase a dog, and secondly assessed whether they indeed acquired a dog or not during a 14-month period. The participants probably encountered other factors that might have influenced their decision, such as positive or negative experiences with dogs or having moved to another place. Despite these possible influences, the psychological measurements we conducted at baseline still predicted a substantial proportion of the variance in actual behavior. Several questions remain and need further investigation. In the end, more insight into the decision-making process may provide us with ways to influence it and thereby promote a good relationship between owner and dog.

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## Conflicts of Interest

The authors declare that there are no conflicts of interest with this work

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